

STAFF REPORT
CITY OF LIVINGSTON
INDUSTRIAL WASTEWATER TREATMENT FACILITY
MERCED COUNTY

The City of Livingston (hereafter City or Discharger) owns and operates an industrial wastewater treatment facility (IWWTF) that provides industrial Wastewater service exclusively for the chicken-processing complex (Complex) owned and operated by Foster Poultry Farms, a California corporation (hereafter Foster Farms). Foster Farms reimburses the City for most of the IWWTF operating and maintenance costs. The IWWTF is about one mile northwest of the City. Waste Discharge Requirements (WDRs) Order No. 79-209 for the City authorizes the discharge of up to 3.5 million gallons per day (mgd) of poultry processing wastewater to IWWTF ponds for treatment and disposal.

The City monitors shallow groundwater in a network of nine wells within and surrounding the IWWTF. Groundwater data submitted by the City indicates groundwater is polluted by nitrogen compounds and degraded from other waste constituents in violation of WDRs Order No. 79-209. These impacts are due, in part, to deficiencies in IWWTF design and maintenance. In August 2000, the City was issued a Notice of Violation (NOV) that required it address the violations and threatened violations of WDRs Order No. 79-209. Subsequently, the City proposed a project to upgrade the IWWTF to reduce the discharge's impact on water quality and ensure its consistency with Regional Water Board plans and policies. Disagreements between the City and Foster Farms over which treatment technology to select for the IWWTF Upgrade Project has delayed its construction and implementation for more than two years. Recent events unrelated to the IWWTF Upgrade Project has strained the working relationship between the City and Foster Farms. The latest implementation schedule submitted by the City projects completion of the IWWTF Upgrade Project by January 2007. Without the impetus of an enforcement action, the IWWTF Upgrade Project could experience further delays.

Staff recommends that the Regional Water Board adopt a Cease and Desist Order (CDO) to memorialize the City's latest IWWTF Upgrade Project implementation schedule. Staff further recommends that the investigation of the lateral and horizontal extent of the groundwater pollution and degradation, including salinity source control, be addressed as part of a separate enforcement action (e.g., cleanup and abatement order).

BACKGROUND AND SITE CONDITIONS

The City supplies Foster Farms with source water from seven City-owned municipal supply wells within City limits. Foster Farms' Complex operates 24 hours a day and 5 to 6 days a week, depending on demand. Two dissolved air flotation (DAF) units operated in parallel at the Complex pretreats poultry processing wastewater prior to discharge to the IWWTF. Foster Farms is a major employer in the local area and contributes to the local, regional, and State economy. The City recently requested Foster Farms to submit a wastewater discharge permit application and intends to develop an industrial wastewater permit for Foster Farms based on information provided in the application.

The IWWTF currently consists of 12 interconnected unlined treatment and disposal ponds (Ponds 1 through 12). Ponds 1 through 9 are on the Merced River's floodplain while Ponds 10, 11, and 12 are on bluffs overlooking the Merced River. Influent into the IWWTF is split at the headworks and discharged to two pond treatment trains operated in parallel. One treatment train consists of Ponds 1 (aerated), 3, 8, and 6, and the other, Ponds 2 (aerated), 4, 5, and 7. Effluent from Pond 6 may be discharged to Pond 7, which is discharged to Ponds 9 through 12 for storage and disposal.

Approximately 30 percent of the wastewater discharged to the IWWTF percolates to groundwater, while the remainder is recycled by Foster Farms on adjacent farmland under the terms and conditions of Wastewater Reclamation Requirements (WRRs) Order No. 93-091. This WRRs Order authorizes the discharge of up to 2.4 mgd of IWWTF effluent to a Reclamation Site owned and operated by Foster Farms. The discharge to the Reclamation Site, which is typically planted in corn, results in an annual total nitrogen loading in excess of 2,000 lbs/acre according to the Foster Farms' 2005 Annual self-monitoring report (SMR). This loading is in excess of crop demand and has caused or contributed to the underlying groundwater containing nitrate as nitrogen in excess of 10 mg/L.

Foster Farms submitted a RWD in October 2005 in support of enlarging the Reclamation Site by 150 acres (Expanded Reclamation Site). Regional Water Board staff letter dated 18 November 2005 determined the RWD complete. On 1 August 2006, the City approved a mitigated negative declaration for the Expanded Reclamation Site in accordance with the California Environmental Quality Act (CEQA). Compliance with the CWC §13264(2)(d) requires Foster Farms to delay until 30 October 2006 its initiation of discharge to the Expanded Reclamation Site. By 30 August 2006 letter, Regional Water Board staff advised the City and Foster Farms that it would not initiate enforcement against Foster Farms should it discharge to the Expanded Reclamation Site before 30 October 2006. It was considered appropriate and reasonable to allow Foster Farms to accept IWWTF effluent in the expanded area as soon as possible as the staff concurred that the expansion was technically sound and its use could prevent possible uncontrolled discharges to the Merced River from a levee breach in IWWTF ponds due to recurrent encroaching freeboard (as explained below in this staff report).

Table 1 below depicts the quality of Foster Farms' source water from October through December 2005, and the average quality of IWWTF influent (after DAF pretreatment) and IWWTF effluent from January 2005 through April 2006. The IWWTF provides 80 to 90 percent BOD removal, and up to 20 percent total nitrogen removal.

TABLE 1
Source Water, IWWTF Influent and Effluent Water Quality

<u>Constituent/Parameter</u>	<u>Units</u>	Source	Effluent		
		<u>Water</u>	<u>Influent</u>	<u>Pond 6</u>	<u>Pond 12</u>
Biochemical Oxygen Demand (BOD)	mg/L	--	330	24	64
Total Kjeldahl Nitrogen (TKN)	mg/L	--	60	49	46

<u>Constituent/Parameter</u>	<u>Units</u>	Source	Effluent	
		<u>Water</u>	<u>Influent</u>	<u>Pond 6</u> <u>Pond 12</u>
Nitrate (as N)	mg/L	3	0.9	<0.1 0.3

Area groundwater occurs typically 40 to 60 feet below ground surface (bgs) and generally flows west, according to groundwater contour maps published by the California Department of Water Resources in 2004.

In general, the percolation of wastewater containing concentrations of oxygen-demanding substances is followed by the natural decomposition of waste constituents within the vadose zone. In this process, biological decomposition generates byproducts including carbon dioxide gas, which dissolves in soil-pore liquid and increases its alkalinity. The depletion of oxygen by soil bacteria causes denitrification, which is desirable, and potentially the mobilization of manganese, iron, and arsenic, which is not. Absent sufficient sustained reliable attenuation of residual waste constituents in the remaining soil profile, the constituents will eventually discharge into groundwater.

In general, for optimum bacterial degradation of organic wastes, the ratio of carbon to nitrogen to phosphorus (C:N:P Ratio) should be 20:5:1, according to *Wastewater Engineering Treatment and Reuse*, Metcalf & Eddy, 2003. The percolation of wastewater containing nitrogen but with disproportionately low concentrations of total organic carbon may retard denitrification and, absent sufficient aeration, may also retard nitrification. In anaerobic soil and groundwater conditions, concentrations of nitrogen in the form of ammonia can leach and discharge to groundwater. Once ammonia in groundwater reaches an aerobic zone it will nitrify into nitrate, which is very mobile in groundwater.

CONDITIONS OF DISCHARGE

Regional Water Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (hereafter Basin Plan) designates the beneficial uses of groundwaters. WQOs listed in the Basin Plan include numeric WQOs (e.g., State drinking water maximum contaminant levels) that are incorporated by reference, and narrative WQOs, including the narrative toxicity objective and the narrative tastes and odors objective for surface and groundwater. Chapter IV of the Basin Plan contains the *Policy for Application of Water Quality Objectives*, which provides that "[w]here compliance with these narrative objectives is required (i.e., where the objectives are applicable to protect specified beneficial uses), the Regional Water Board will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives" (Basin Plan, p. IV-17.00). The constituent of concern that implements the cited Basin Plan WQOs in this case is nitrate, which has a California Primary maximum contaminant level (MCL) of 10 mg/L as NO₃-N (Title 22 California Water Code (CCR) 64449, Table 64431-A, Department of Health Services). Ammonia in groundwater in concentrations greater than 10 mg/L (as nitrogen) is also of concern because when converted to nitrate under aerobic conditions it may cause groundwater to exceed the nitrate WQO.

The Basin Plan includes State Water Resources Control Board (hereafter State Water Board) Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality Waters in California* (State “Antidegradation” policy or Resolution 68-16). Resolution 68-16 precludes discharge of waste that degrades high quality waters of the State until a discharger demonstrates to this Regional Water Board that a change in quality is consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in water quality policies (i.e., the change results in exceedances of water quality objectives). Resolution 68-16 requires discharges that may cause degradation of such waters be subjected to best practicable treatment and control (BPTC) that minimizes the degradation.

WDRs Order No. 79-209, states, in part, the following:

“A. Waste Discharge Specifications

1. Neither the treatment nor the discharge shall cause a nuisance or pollution as defined in the California Water Code.
2. The discharge shall not cause degradation of any water supply.
3. The thirty-day mean daily flow shall not exceed 3.5 mgd.

* * *

B. Prohibitions

1. The discharge of water to surface waters, surface water drainage courses or canals either by direct discharge or runoff from the disposal site is prohibited.”

Section 13050(l)(1) of the California Water Code (CWC) defines pollution as “an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (A) The waters for beneficial uses. (B) Facilities which serve these beneficial uses.”

Monitoring and Reporting Program No. 79-209 (MRP), revised in 1992, requires monitoring of the IWWTF influent and effluent, the Merced River upstream and downstream of the IWWTF, source water supply, and groundwater. The MRP also requires pond monitoring.

VIOLATIONS OF WDRs ORDER NO. 79-209

The Discharger has discharged in a manner that resulted in groundwater pollution and other violations or threatened violations of WDRs Order No. 79-209. These violations are described below:

Groundwater Pollution. The revised MRP required the Discharger to install groundwater monitoring wells and monitor groundwater quarterly for elevation, ammonia and chloride. In 1993, the Discharger installed two on-site wells (MW-1 and MW-2) and one off-site well (Peach House Well). Data from these wells, as well as nearby supply wells, showed groundwater substantially degraded from salts and nitrate. On 4 August 2000, the Discharger was issued a

NOV for threatening to cause or contribute to the groundwater pollution that required the Discharger to install additional monitoring wells. The NOV also indicated that the existing IWWTF was not reflective of BPTC.

In late 2000, Foster Farms installed eight additional wells. The current network consists of nine wells: an upgradient well near a surface water irrigation canal (MW-9), three wells directly along the Merced River (MW-2, MW-5 and MW-7), one well within the immediate area of Ponds 1 and 2 (MW-4), and four wells within various areas of the ponds (MW-3, MW-6, MW-10, and MW-11). Beginning in late 2000, the Discharger monitored all wells monthly for one year, and then quarterly for total coliform organisms, chemical oxygen demand, total organic carbon, total Kjeldahl nitrogen (TKN), ammonia, nitrate, phosphorus, and general minerals.¹

Table 2 below summarizes groundwater quality monitoring results from October 2000 through October 2005 for nitrate and ammonia.

TABLE 2
Selected Groundwater Quality Data

<u>Monitoring Well #</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>	<u>MW-5</u>	<u>MW-6</u>	<u>MW-7</u>	<u>MW-9</u>	<u>MW-10</u>	<u>MW-11</u>
NO ₃ -N (mg/L)									
Average	10	1	1	<0.1	2	2	13	12	2
Minimum	0.3	0.1	0.1	0.1	0.2	0.2	3	2	0.1
Maximum	15	2.5	7.6	0.2	8.85	12	32	47	11.5
NH ₃ -N (mg/L)									
Average	2	36	7	59	22	24	1	9	3
Minimum	0.2	0.7	0.5	6	2.4	6	0.2	2	0.8
Maximum	12	64	23	103	113	40	2.1	24	6.9

While intended to monitor background groundwater quality, MW-9 is adjacent to a surface water irrigation canal and is dominated by seepage of exceptionally high quality canal water not representative of natural or ambient background quality. The Discharger's well network needs a well situated to characterize upgradient or otherwise ambient groundwater.

Table 2 above shows that nitrate concentrations in some wells exceed the WQO while ammonia concentrations exceed 10 mg/L in other wells. In general, wells containing low

¹ Mineral analysis include arsenic (which has not been monitored), alkalinity, bicarbonate, boron, calcium, carbonate, chloride, conductivity, copper, hardness, hydroxide, iron, magnesium, manganese, pH, potassium, sodium, sulfide, sulfate, sulfite, total dissolved solids, and zinc.

concentrations of nitrate also contain elevated concentrations of iron and manganese,² which signify anoxic or anaerobic conditions.

Concentrations of constituents in underlying groundwater that exceed what is protective of beneficial uses violate Waste Discharge Specifications A.1 and A.2. Exceedances of WQOs relative to salinity and other waste constituents will be addressed in a separate order.

The following practices have caused, contributed to, or have potential to cause or contribute to violations of Waste Discharge Specifications A.1 and A.2, focusing on those that related to organic and nutrient overloading.

- Unlined Ponds. The existing IWWTF features unlined treatment ponds. The lack of containment has resulted in the release to soil of waste constituents as the impounded wastewater infiltrates. The soils underlying the unlined ponds contain significant amounts of leached waste constituents. Leached constituents reaching groundwater have caused groundwater to contain nitrate in excess of the WQO and ammonia once converted to nitrate in concentrations that impair its beneficial use for domestic and municipal supply. Wells downgradient from or within the immediate vicinity of first-stage treatment ponds (Ponds 1 and 2) contain elevated concentrations of ammonia. In general, areas degraded from iron and manganese (as explained above) typically correlates with low concentrations of nitrate due to the denitrification resulting from anoxic or anaerobic conditions. Under these conditions, nitrogen occurs in the form of ammonia. As previously noted, once ammonia in groundwater reaches an aerobic zone it will nitrify to nitrate.
- Excessive Sludge Accumulation. Over the last several years, excessive quantities of sludge have accumulated in the ponds, diminishing their treatment capacity and posing an unreasonable threat to water quality. According to a January 2001 *Pond Sludge Survey Report* (Survey Report), about 190,000 cubic yards of wet sludge had accumulated in the ponds (primarily Ponds 1, 2, 3, and 5). Data from the Survey Report also showed TKN concentrations ranging in the sludge from 220 to 3,400 mg/L. If leached and not attenuated in the soil profile, this additional nitrogen loading contributes to nitrate and ammonia in groundwater. In 2005, 2,400 dry tons of sludge were removed from Ponds 2 and 3. In 2006, Foster Farms' consultant identified approximately 450 dry tons of sludge remain in the ponds.
- Effluent Percolation. Disposal by percolation of approximately 32 percent³ of effluent with total nitrogen of 45 mg/L has caused and is contributing to cause groundwater pollution by nitrate. The Discharger has indicated it will rehabilitate the existing ponds,

² Monitoring wells contain iron ranging from <0.05 to 28 mg/L and manganese ranging from <0.01 to 16 mg/L.

³ Calculated using the sum of the influent and infiltration volumes from January 2005 through April 2006 (not including February 2005, for which the SMR did not report a flow): ((1,717 acre-feet infiltration volume (as reported in SMRs) / 5,225 acre-feet of influent flow) * 100)).

which will increase percolation rates; thereby increasing the potential to exacerbate existing nitrogen impacts unless mitigated.

Freeboard Encroachment. Order No. 79-209 does not include a minimum freeboard requirement, but it does prohibit the direct or indirect discharge to surface waters (Prohibition B.1). The IWWTF 1985 *Operation and Maintenance Manual* (O&M Manual) prepared by Carollo Engineers states that it is desirable to maintain two feet of freeboard to prevent erosion of the pond levees. Waste discharge requirements for discharges to ponds typically require at least two feet of freeboard be maintained as standard practice. It is appropriate to determine threat of violation of Prohibition B.1 based on the freeboard monitoring submitted by the City as part of the SMRs compared to the O&M Manual. Discharger SMRs from January 2005 through April 2006 indicate that freeboard is less than 2 feet in at least two or more ponds each month, and is frequently less than 1 foot in at least one pond each month. Failure to adhere to the 2-foot minimum freeboard could compromise the integrity of the levees, threatening catastrophic levee failure that would result in wastewater discharge to the Merced River.

Foster Farms reduced the amount of effluent it discharged to the Reclamation Site to abate conditions of standing water, which threatened to create vector nuisance and a potential public health threat (e.g., from West Nile Virus). Wastewater application also exceeds agronomic demand for water and nitrogen further impacting groundwater. Although Foster Farms reduced flows to the Reclamation Site, it did not reduce flows to the IWWTF. This created the existing freeboard conditions at the IWWTF and effectively reduced the overall hydraulic capacity of the IWWTF. An expanded Reclamation Site should mitigate this condition.

Flow. The IWWTF was designed to treat 21 million gallons for any 7-day period, based on an influent BOD concentration of 610 mg/L, according to the IWWTF's O&M Manual. This equates to a BOD loading rate of 106,890 lbs/week or 427,560 lbs/month and a design flow capacity of between 3.0 and 3.5 mgd. In 1985, Foster Farms implemented DAF pretreatment that reduced BOD loadings to the ponds by about 50 percent.⁴

Historically, the influent flow to the IWWTF has been fairly constant and in compliance with the 3.5 mgd limit. Daily water usage and, by extension, discharge flow is dependent upon the number of birds processed daily at the Complex. Discharges to the IWWTF increased in January 1997 as a consequence of the requirements of the United States Department of Agriculture (USDA), which mandates the minimum flows in specific parts of the Complex dependent on the type of process (e.g., 1/2 gallon per bird overflow per chiller and 1/4 gallon per bird overflow at the scalders). These regulations are reviewed and modified by USDA as necessary. Changes in these regulations impact the overall water usage by Foster Farms, and therefore influent flow to the IWWTF.

⁴ According to January 2005 through April 2006 SMRs, the average influent IWWTF concentration was 330 mg/L.

Discharger SMRs from January 2005 to April 2006 indicate that the monthly average discharge flow exceeded the limit of 3.5 mgd nine out of 16 months, as shown in Figure 1 below.

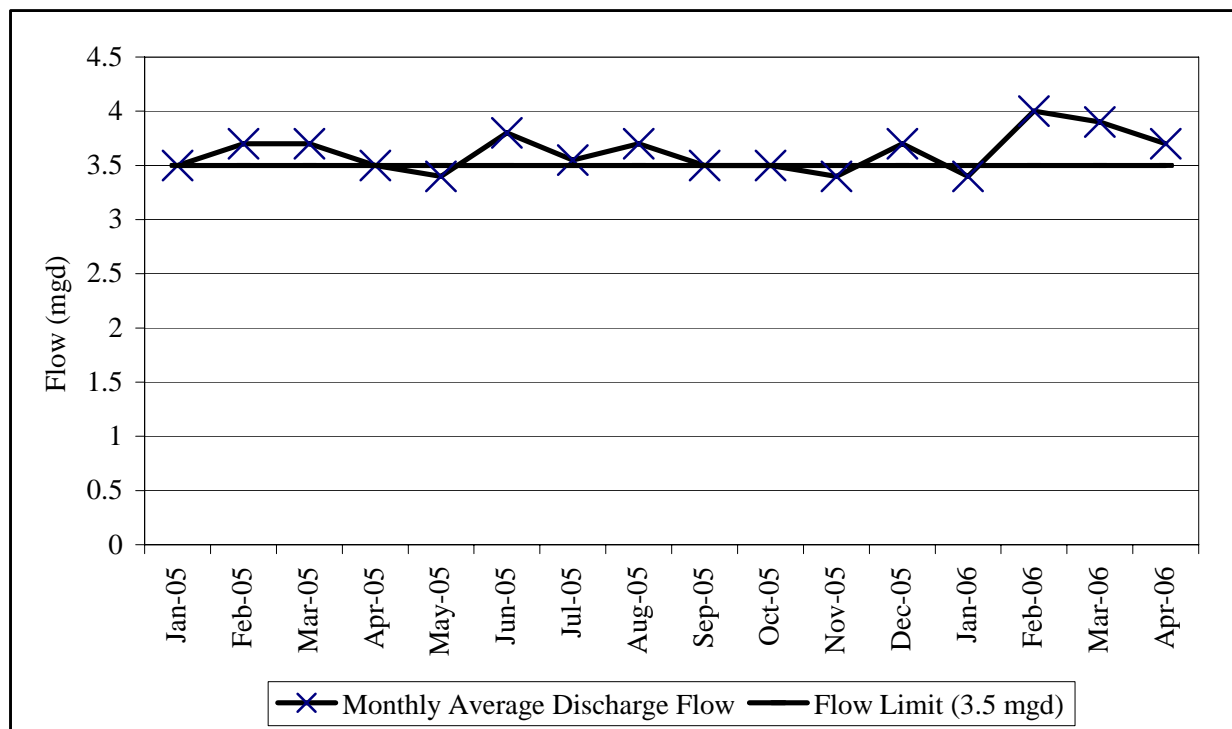


Figure 1. Monthly average daily IWWTF influent flow.

On 28 August 2006, the Discharger submitted a RWD in support of an increase in discharge flow and material change in the nature of the discharge (i.e., implementation of the IWWTF Upgrade Project). Regional Water Board staff is reviewing the RWD for completeness. Preliminary review indicates the RWD is incomplete, in part, because it lacks a water balance demonstrating sufficient effluent disposal capacity for the increase in discharge flow. This proposed Order establishes a task and compliance deadline for submittal of a complete RWD.

The Discharger's consultant and Foster Farms have stated their opinion that influent flows in excess of 3.5 mgd do not violate WDRs Order No. 79-209. Specifically, the City's consultant stated that the flow increase was previously approved as a result of the Regional Water Board staff concurrence with the Upgrade Project. Foster Farms has stated that, because current BOD loadings are less than design loadings, the IWWTF could accommodate additional flow provided that BOD loadings remain at or below design levels. Regarding the BOD loadings, this is generally correct for a surface water discharge where disposal hydraulics are not limiting. It is not the case here where storage and disposal constraints are limiting.

FACILITY PLAN - IWWTF UPGRADE PROJECT

The City proposes to upgrade the IWWTF to be consistent with Regional Water Board plans and policies. The IWWTF Upgrade Project features the implementation of biological nitrogen removal treatment technology. Attachment A summarizes City and Regional Water Board staff correspondence related to the IWWTF Upgrade Project.

In February 2003, the City submitted a *Final Industrial Wastewater Treatment Plan Facility Plan* (Final Facility Plan) prepared by Carollo Engineers that evaluated two alternatives that differ with respect to effluent total nitrogen concentration and cost. Alternative A would reduce the total nitrogen in IWWTF effluent to between 8 and 10 mg/L, and cost \$17,712,000. Alternative B would reduce the total nitrogen to 5 mg/L and cost \$20,200,000. The Facility Plan indicates that Alternative A can accommodate additional downstream processes for further nitrogen removal (e.g., for remediating groundwater impacted by the current discharge). The Facility Plan proposed implementing Alternative A by January 2007.

Regional Water Board staff letter dated 9 May 2003 stated, “the [Facility] Plan provides justification for implementing a treatment process upgrade for nitrogen removal at the IWWTF that demonstrates BPTC.” Therefore, staff had no objection to the proposed preferred alternative considering site-specific conditions. The technology implemented for nitrogen removal, as proposed in the Facility Plan, can be expected to reduce effluent BOD and total suspended solids (TSS) to less than 10 mg/L each. Regional Water Board staff recommends that the Regional Water Board find as BPTC for this discharge, the implementation of a biological nitrogen removal treatment technology that will reduce BOD, TSS, and total nitrogen to less than 10 mg/L each. The proposed discharge will not result in exceedances of the nitrate WQO and the resulting degradation will be consistent with the maximum benefit to the people of the State. The City still needs to submit additional information to the Regional Water Board to justify that it is controlling salts in a manner that reflects BPTC. This proposed enforcement order does not address this issue.

In summary, the IWWTF Upgrade Project will include treatment (influent pump station, flow meters, oxidation ditches, clarifiers, effluent pump station, percolation ponds) and solids management (centrifuge, haul, direct land application for agricultural use). The IWWTF Upgrade Project also includes the removal of accumulated sludge from the ponds and their rehabilitation for use as percolation ponds.

IWWTF Upgrade Project Delays. In a letter dated 23 December 2003, the City provided an update of the status of the IWWTF Upgrade Project. The letter indicated that the City was working with Foster Farms’ legal representatives to determine the most cost-effective method for financing the project, but re-iterated its commitment to meet the January 2007 deadline. By 24 June 2006 letter, the City provided another update of the IWWTF Upgrade Project. The letter stated, “after extensive investigation regarding alternative project delivery methods to reduce the project cost, it has been determined that the upgrade project should proceed as a standard public design-bid-build construction project.” It further indicated that the IWWTF Upgrade Project would be that initially recommended in Carollo Engineers’ February 2003

Facility Plan and proposed to complete the project by September 2007. In a 21 June 2006 meeting with Regional Water Board staff, the City indicated that, due to delays in determining the appropriate consultant to design the IWWTF Upgrade Project, the new proposed completion date would be December 2008, which is more than three years later than the first proposed completion date.

Violation Resolution. Completion of the IWWTF Upgrade Project will resolve ongoing violations of WDRs Order No. 79-209 by significantly improving discharge quality for both organics and nutrients, thereby reducing the discharge's overall impact to water quality. Removal of solids from the existing ponds will reduce continued impact from this source. Violations of the flow limit will also be resolved once the IWWTF Upgrade Project is complete and the Regional Water Board authorizes the increase in flow. The threat of a levee breach causing an uncontrolled surface water discharge will be immediately reduced as Foster Farms begins discharging to the expanded Reclamation Site.

PROPOSED CEASE AND DESIST ORDER

Section 13301 of the CWC states, in part, that: "When the regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements...the regional board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation of waste discharge requirements in the operation of a community sewer system, cease and desist orders may restrict or prohibit the volume, type, or concentration of waste that might be added to such system by dischargers who did not discharge into the system prior to the issuance of the cease and desist order...."

As described above, deficiencies in IWWTF design and maintenance have caused the City to violate the terms and conditions of Order No. 79-209. The City will continue to violate Order No. 79-209 until it completes the IWWTF Upgrade Project. Staff proposes a CDO to establish a time schedule that requires the City to perform a series of tasks to comply with Order No. 79-209 and to submit various technical reports pursuant to CWC §13267. The City concurs with the tasks and associated time schedule.

Staff proposes a CDO that requires the City to:

- Cease and desist discharging wastes in violation of WDRs
- Submit by 15 March 2007 a report of waste discharge in support of the IWWTF Upgrade Project and increase in discharge flow
- Submit by 15 May 2007 written evidence that CEQA has been satisfied for the IWWTF Upgrade Project
- Submit by 15 June 2007 written evidence that construction of the IWWTF Upgrade Project has begun

- Submit by 15 January 2009 written evidence that the IWWTF Upgrade Project is complete
- Submit by 15 January 2009 an operations and maintenance manual of the upgraded IWWTF

Foster Farms has recently advised Regional Water Board staff that it intends to submit by 25 October 2006 a Report of Waste Discharge in support of a discharge from its own biological nitrogen removal treatment plant, which it proposes to construct by the 31 December 2008 deadline established in the proposed Cease and Desist Order. The construction and operation by Foster Farms of its own treatment plant will obviate the need for the City to implement its proposed IWWTF Upgrade Project. In that event, staff will propose the Regional Water Board revise the Cease and Desist Order accordingly.

STAFF REPORT
ATTACHMENT A – IWWTF UPGRADE PROJECT CHRONOLOGY

CITY OF LIVINGSTON
INDUSTRIAL WASTEWATER TREATMENT FACILITY
MERCED COUNTY

The following chronology summarizes relevant documents pertaining to the City of Livingston's industrial wastewater treatment facility (IWWTF) upgrade project.

<u>Date</u>	<u>Document</u>
Aug. 2001	<i>DRAFT Industrial Wastewater Treatment Plant Facility Plan</i> (Draft Facility Plan), prepared by Carollo Engineers, evaluates the existing IWWTF and recommends three alternatives to upgrade the IWWTF to determine the most cost-effective solution to protect groundwater quality, focusing primarily on nitrogen removal. The Draft Facility Plan evaluates the two most conventional means of nitrogen removal: crop uptake and treatment systems involving biological nutrient removal (BNR) processes. The Draft Facility Plan proposes a BNR process as its preferred alternative.
6 Nov. 2001	Regional Water Board staff letter concurs with the preferred alternative, but indicates that the Draft Facility Plan lacks the level of detail necessary to determine what particular BNR design will provide treatment sufficient to qualify as BPTC and assure the highest water quality. The letter indicates that the final Facility Plan must include or propose the submittal of a supplemental report to predict the quality of leached wastewater released to groundwater and quantitatively demonstrate that the preferred alternative is reflective of BPTC.
Jan. 2002	<i>Industrial Wastewater Treatment Plant Facility Plan</i> (Facility Plan), prepared by Carollo Engineers, recommends using oxidation ditch treatment technology to meet a total nitrogen effluent concentration of 10 mg/L or less. The Facility Plan discusses long-term solids handling alternatives, which include mechanical dewatering with offsite land application for agricultural use. The IWWTF upgrades were to be completed by August 2005.
14 May 2002	Regional Water Board staff letter re-iterates issues raised in the 6 November 2001 letter and requests the City provide sufficient information to make its own case that the IWWTF upgrades are reflective of BPTC by, at a minimum, demonstrating attainment of water quality objectives in infiltrated effluent as it reaches groundwater, as well as a favorable comparison with U.S. Environmental Protection Agency (EPA) draft guidelines for poultry processing effluent quality.

<u>Date</u>	<u>Document</u>
Oct. 2002	<i>Evaluation of Best Practical Treatment and Control, Best Available Technology Economically Achievable and Proposed Effluent Limitation Guidelines for Poultry Processing Wastewater</i> (BAT Report) prepared by Reid Engineering Company, Inc., provides documentation that the proposed BNR system reflects “best practical treatment and control technology,” specifically focusing on the proposed Effluent Limitation Guidelines (ELGs) for the Meat and Poultry Products Industry published by the EPA in February 2002. The BAT Report indicates that a total nitrogen concentration of less than 10 mg/L is achievable, but also recommends that nitrogen can be effectively removed using a “more sophisticated” four-stage activated sludge treatment process.
Feb. 2003	<i>Final Facility Plan</i> prepared by Carollo Engineers incorporates the BAT Report and evaluates two alternatives that differ with respect to effluent total nitrogen concentration and cost. Alternative A would reduce the total nitrogen in IWWTF effluent to between 8 and 10 mg/L, and cost \$17,712,000. Alternative B would reduce the total nitrogen to 5 mg/L and cost \$20,200,000. The Facility Plan indicates that Alternative A can accommodate additional downstream processes for further nitrogen removal (e.g., for remediating groundwater impacted by the current discharge.). The Facility Plan proposes implementing Alternative A by January 2007.
9 May 2003	Regional Water Board staff letter indicates that it had no objection to the proposed preferred alternative.

ARP: 10/12/2006